WHAT IS CLAIMED IS:

1. A method for displaying a video composed of images each comprising a predetermined number M of lines and, a predetermined number N of pixels in each line, where M and N are integers, the method comprising the steps of:

storing in memory values of a predetermined number P of reference pixels for each line of a current image of the video, where P is an integer that is less than N;

determining, for each line of the current image, the value of a parameter associated with the line, the parameter corresponding to the number of the reference pixels of the line that are black according to a first predetermined criterion; and

determining a first nonblack line and a last nonblack line of the current image to serve as a basis for an automatic reframing of the images of the video before display, the first nonblack line of the current image being determined by excluding, starting from a first line of the image, the lines of the image which are black according to a second predetermined criterion based on the parameter, and the last nonblack line of the current image being determined by excluding, starting from a last line of the image, the lines of the image which are black according to the second predetermined criterion based on the parameter.

2. The method according to claim 1, wherein a distribution of the reference pixels in at least one of the lines is substantially uniform.

3. The method according to claim 1, wherein a distribution of the reference pixels in at least one of the lines is nonuniform, with more reference pixels being located near the center of the line than at the left and/or right ends of the line.

4. The method according to claim 1, wherein a distribution of the reference pixels is the same for all of the lines of the current image.

5. The method according to claim 1, wherein locations of the reference pixels vary over time.

6. The method according to claim 1,

wherein the video is a color video represented as luminance and chrominance components, and

the first criterion includes comparing a value of the luminance component of the reference pixel with at least one predetermined threshold.

7. The method according to claim 6, wherein the second criterion includes comparing a value of the parameter with a predetermined threshold.

8. The method according to claim 1,

wherein the video is a color video represented as luminance and chrominance components, and

the first criterion includes comparing a value of the luminance component of the reference pixel with at least one first predetermined threshold, and comparing a value of at least one chrominance component of the reference pixel with at least one second predetermined threshold.

9. The method according to claim 1, wherein the second criterion includes comparing a value of the parameter with a predetermined threshold.

10. The method according to claim 1, further comprising a step of reframing the current image before display either: on the basis of the first nonblack line and the last nonblack line of the current image, or on the basis of the first nonblack line and the last nonblack line of an earlier image of the video if at least one of one or more conditions is not achieved.

11. The method according to claim 10,

wherein the one or more conditions include first, second and third conditions,

the first condition is that an average luminance of the current image is less than a predetermined threshold,

the second condition is that a distance between the first nonblack line and the last nonblack line of the current image, and the first nonblack line and the last nonblack line of the earlier image is less than a first predetermined threshold, and

the third condition is that a distance between the first nonblack line and the last nonblack line of the current image, and the first nonblack line and the last nonblack line of each of K previous images, is less than a second predetermined threshold, where K is a predetermined integer.

12. The method according to claim 1, further comprising a steps of:

detecting subtitles in the black lines at the bottom of the image; and

if subtitles are detected, reframing the current image before display on the basis of the first nonblack line and the last line of the image.

13. A machine-readable medium encoded with a program for displaying a video composed of images each comprising a predetermined number M of lines and, a predetermined number N of pixels in each line, where M and N are integers, the program containing instructions for performing the steps of:

storing in memory values of a predetermined number P of reference pixels for each line of a current image of the video, where P is an integer that is less than N;

determining, for each line of the current image, the value of a parameter associated with the line, the parameter corresponding to the number of the reference pixels of the line that are black according to a first predetermined criterion; and

determining a first nonblack line and a last nonblack line of the current image to serve as a basis for an automatic reframing of the images of the video before display, the first nonblack line of the current image being determined by excluding, starting from a first line of the image, the lines of the image which are black according to a second predetermined criterion based on the parameter, and the last nonblack line of the current image being determined by excluding, starting from a last line of the image, the lines of the image which are black according to the second predetermined criterion based on the parameter.

14. The machine-readable medium according to claim 13,

wherein the video is a color video represented as luminance and chrominance components, and

the first criterion includes comparing a value of the luminance component of the reference pixel with at least one predetermined threshold.

15. The machine-readable medium according to claim 13, wherein the second criterion includes comparing a value of the parameter with a predetermined threshold.

16. The machine-readable medium according to claim 13, wherein the program further contains instructions for performing the step of reframing the current image before display either: on the basis of the first nonblack line and the last nonblack line of the current image, or on the basis of the first nonblack line and the last nonblack line of an earlier image of the video if at least one of one or more conditions is not achieved.

17. The machine-readable medium according to claim 13, wherein the program further contains instructions for performing the steps of:

detecting subtitles in the black lines at the bottom of the image; and

if subtitles are detected, reframing the current image before display on the basis of the first nonblack line and the last line of the image.

18. A system for displaying a video composed of images each comprising a predetermined number M of lines, and a predetermined number N of pixels in each line, where M and N are integers, the system comprising:

a memory for storing values of a predetermined number P of reference pixels for each line of a current image of the video, where P is an integer that is less than N;

first means for determining, for each line of the current image, the value of a parameter associated with the line, the parameter corresponding to the number of the reference pixels of the line that are black according to a first predetermined criterion, and for determining a first nonblack line of the current image by excluding, starting from a first line of the image, the lines of the image which are black according to a second predetermined criterion based on the parameter, and for determining a last nonblack line of the current image by excluding, starting from a last line of the image, the lines of the image which are black according to the second predetermined criterion based on the parameter; and

second means for automatically reframing the current image before display based on a first nonblack line and a last nonblack line.

19. The system according to claim 18, wherein a distribution of the reference pixels in at least one of the lines is substantially uniform.

20. The system according to claim 18, wherein a distribution of the reference pixels in at least one of the lines is nonuniform, with more reference pixels being located near the center of the line than at the left and/or right ends of the line.

21. The system according to claim 18, wherein a distribution of the reference pixels is the same for all of the lines of the current image.

22. The system according to claim 18, wherein locations of the reference pixels vary over time.

23. The system according to claim 18,

wherein the video is a color video represented as luminance and chrominance components, and

the first criterion includes comparing a value of the luminance component of the reference pixel with at least one predetermined threshold.

24. The system according to claim 18,

wherein the video is a color video represented as luminance and chrominance components, and

the first criterion includes comparing a value of the luminance component of the reference pixel with at least one first predetermined threshold, and comparing a value of at least one chrominance component of the reference pixel with at least one second predetermined threshold.

25. The system according to claim 18, wherein the second criterion includes comparing a value of the parameter with a predetermined threshold.

26. The system according to claim 18, wherein the second means reframes the current image before display either: on the basis of the first nonblack line and the last nonblack line of the current image, or on the basis of the first nonblack line and the last nonblack line of an earlier image of the video if at least one of one or more conditions is not achieved.

27. The system according to claim 26,

wherein the one or more conditions include first, second and third conditions,

the first condition is that an average luminance of the current image is less than a predetermined threshold,

the second condition is that a distance between the first nonblack line and the last nonblack line of the current image, and the first nonblack line and the last nonblack line of the earlier image is less than a first predetermined threshold, and

the third condition is that a distance between the first nonblack line and the last nonblack line of the current image, and the first nonblack line and the last nonblack line of each of K previous images, is less than a second predetermined threshold, where K is a predetermined integer.

28. The system according to claim 18, further comprising:

means for detecting subtitles in the black lines at the bottom of the image,

wherein if subtitles are detected, the second means reframes the current image before display on the basis of the first nonblack line and the last line of the image